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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,167	03/04/2002	Mikael Berlin	027650.968	2969

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EXAMINER
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MUSSER, BARBARA J

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/070,167

Applicant(s)

BERLIN ET AL.

Examiner

Barbara J. Musser

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: 5/13/05
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

However, this action is considered to replace the final rejection dated 1/26/05 and since the claims were amended on 10/19/04, and the changes to the final rejection were due to the changes to the amendment, this action is also made final.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The specification's only description of a heat-sensitive plastic is that it can be used when curing occurs above 130C. The claim requires it to be heat-sensitive above the second temperature, i.e. above 130. These are not the same thing. It is suggested that "to temperatures" be changed to --at temperatures--.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1733

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9, 11, 12, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812 in view of Berlin et al.'536, Wilkinson et al., Lofgren et al.(U.S. Patent 5,683,534), and Farrell et al.

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core.(Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer(Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature than the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier.(Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have

been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

The references cited show the barrier layer located between the carrier layer and the core rather than the barrier layer being located on the side of the carrier facing away from the core. Lofgren et al. discloses a laminated packaging material formed from a carrier layer and a paperboard core wherein the barrier layer is located on the side of the carrier layer facing away from the paperboard core.(Col. 3, ll. 4-15; Figure 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the barrier layer on the side of the carrier not facing the core since this is an obvious alternative to placing it on the side facing the core, particularly since Farrell et al. shows a barrier material in the same situation as in Lofgren et al., with the barrier material separated from the air only by an outer thermoplastic layer(Figure 1).

Regarding claim 2, Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Berlin et al. '536 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(Pg. 10, ll. 13-17) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer since Berlin et al. '812 is silent as to the method of bonding and since Berlin et al. '536 shows that extruding an adhesive to

Art Unit: 1733

bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.

Regarding claim 3, the barrier layer is formed by coating the carrier.(Berlin et al. '812, Pg. 9, ll. 1-8)

Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(Berlin et al. '812, Pg. 9, ll. 32)

Regarding claim 6, Berlin et al. '536 discloses the barrier layer can be dried at 100.(Pg. 12, ll. 10)

Regarding claims 7-9, Berlin et al. '536 discloses mixing ethylene acrylic acid with polyvinyl alcohol to create a gas barrier.(Pg. 5, ll. 10-1; Pg. 7, ll. 1-2)

Regarding claims 11 and 19, Berlin et al. '536 discloses the barrier layer can be cured at 170C.(Pg. 12, ll. 11)

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m<sup>2</sup>.(Berlin et al. '812, Pg. 9, ll. 34)

Regarding claim 15, Berlin et al. '536 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2; Pg. 9, ll. 27-30)  
It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the barrier layer to protect them and since this would allow heat sealing as shown for example by Berlin et al. '536.(Pg. 9, ll. 35)

Regarding claim 16, as the adhesive layer between the paper and core of Berlin et al., Berlin et al. '536, and Wilkinson et al. is the same as applicant's, it would have the capabilities, namely functioning as a light barrier.

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(Berlin et al. '812, Pg. 2, ll. 5-9)

Regarding claim 20, Berlin et al. '536 discloses the outer layers can be polyethylene.(Pg. 9, ll. 27-30)

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812, Berlin et al. '536, Wilkinson et al., Lofgren et al., and Farrell et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

7. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desaulniers(U.S. Patent 3,499,820) in view of Berlin et al. '812, Berlin et al.'536, Wilkinson et al., Lofgren et al., and Farrell et al.

Desaulniers discloses forming a laminate used in food packaging by applying a polymer dispersion to a paper substrate and driving off the solvent.(Col. 3, ll. 25-28; Col. 4, ll. 20-28; Col. 7, ll. 1-39) The reference does not disclose applying this laminate to a paperboard core. Berlin et al. '812 discloses forming a laminate of a polymer film coated with a polymer dispersion to a paper core. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the laminate of Desaulniers to a paperboard core as shown by Berlin et al. since the laminate of Berlin et al. suggests an additional layer is necessary and since the paper/polymer laminate of Desaulniers is too flexible to serve as a container without additional support as shown in Berlin et al. where the polymer/polymer laminate is applied to an additional support before use.

Desaulniers discloses drying the film(Col. 2, ll. 23-24) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature than the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier.(Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer,



Art Unit: 1733

drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items and that this process results in a material which is rigid when wet but not brittle.(Col. 1, ll. 23-24, 33-46, 65-69; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Berlin et al. '536 suggests a two stage drying/curing process results in an improved barrier layer and since Wilkinson et al. discloses this process is known for materials that contact food items and forms laminates which are rigid when in contact with liquid but are not brittle.(Col. 1, ll. 23-46, 65-69)

The references cited show the barrier layer located between the carrier layer and the core rather than the barrier layer being located on the side of the carrier facing away from the core. Lofgren et al. discloses a laminated packaging material formed from a carrier layer and a paperboard core wherein the barrier layer is located on the side of the carrier layer facing away from the paperboard core.(Col. 3, ll. 4-15; Figure 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the barrier layer on the side of the carrier not facing the core since this is an obvious alternative to placing it on the side facing the core, particularly since Farrell et al. shows a barrier material in the same situation as in Lofgren et al., with the barrier material separated from the air only by an outer thermoplastic layer(Figure 1).

Regarding claim 14, since the references are intended to make the same types of products as applicant, one in the art would appreciate that the paper used would have the same weight range as applicant.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812 in view of Berlin et al. '536, Wilkinson et al., Lofgren et al., Farrell et al., and Lu et al. (U.S. Patent 6,331,346)

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core. (Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer (Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature than the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160°C, and then cured at 170-230°C. (Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier. (Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried (Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items. (Col. 1, ll.

Art Unit: 1733

23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al., discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

The references cited show the barrier layer located between the carrier layer and the core rather than the barrier layer being located on the side of the carrier facing away from the core. Lofgren et al. discloses a laminated packaging material formed from a carrier layer and a paperboard core wherein the barrier layer is located on the side of the carrier layer facing away from the paperboard core.(Col. 3, ll. 4-15; Figure 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the barrier layer on the side of the carrier not facing the core since this is an obvious alternative to placing it on the side facing the core, particularly since Farrell et al. shows a barrier material in the same situation as in Lofgren et al., with the barrier material separated from the air only by an outer thermoplastic layer(Figure 1).

Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Berlin et al. '536 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(Pg. 10, ll. 13-17) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer since Berlin et al. '812 is silent as to the method of bonding and

Art Unit: 1733

since Berlin et al. '536 shows that extruding an adhesive to bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.

Berlin et al. '536 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2; Pg. 9, ll. 27-30) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the barrier layer to protect them and since this would allow heat sealing as shown for example by Berlin et al. '536.(Pg. 9, ll. 35)

The references cited above do not disclose two separate production lines but rather one continuous line. The use of separate production lines is well-known in general in the processing arts as shown for example by Lu et al. which discloses that it is conventional when applying a coating to a web to apply the coating, allow it to dry, and re-wind the film for later use.(Col. 2, ll. 25-30) It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the carrier with the dried barrier layer in one process line, wind it up, bring it to another process line and unwind it since Lu et al. discloses it is conventional in the coating arts to apply a coating to a web, allow it to dry, and re-wind the film for later use(Col. 2, ll. 25-30) particularly since Lofgren et al. indicates two prefabricated layers are laminated together(Col. 3, ll. 48-55) indicating these layers were formed in previous processes.

***Response to Arguments***

9. Applicant's arguments filed 4/14/05 have been fully considered but they are not persuasive.

Regarding applicant's argument that Lofgren et al. is not prior art, Lofgren et al. 5,683,534 is a divisional of the parent previously cited and was issued more than one year prior to applicant's effective filing date.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara J. Musser whose telephone number is (571)

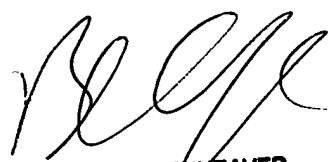
Art Unit: 1733

272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571)-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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